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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/973,783	10/11/2001	Fred A. Bunn	1875.0680002	7272

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EXAMINER

JOO, JOSHUA

ART UNIT PAPER NUMBER

2154

DATE MAILED: 06/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/973,783	<b>Applicant(s)</b> BUNN ET AL.	
	<b>Examiner</b> Joshua Joo	<b>Art Unit</b> 2154	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 11 October 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 9/18/2004.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

*Re*

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1. Claims 1-9 are presented for examinations.

***Information Disclosure Statement***

2. The information disclosure statement (IDS) submitted 7/09/2002, 8/04/2003, 9/24/2003, and 9/18/2004 are in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 3, 4, 7, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohmoto et al, US Patent #5,646,617 (Ohmoto hereinafter) in view of Rakib et al, US Patent #6,889,385 (Rakib hereinafter).

5. As per claim 1, Ohmoto teaches substantially the invention as claimed including a method for generating a data compression dictionary. Ohmoto's teachings comprising of:

- i. identifying a plurality of frequently occurring data strings (Figs 2; Col 6, lines 32-40. Identifies repeating character strings.);
- ii. assigning a token to represent each one of said plurality of frequently occurring data strings (Col 4, lines 30-34. Replace strings with registration numbers.);

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iii. entering each one of the plurality of frequently occurring data strings and each token assigned to represent each one of the plurality of frequently occurring data strings into a lookup table to produce a data compression dictionary (Col 6, lines 64-65. Correlates registration number with character string in the dictionary.); and

iv. transmitting the data compression dictionary (Col 10, lines 49-54. Outputs the dictionary.).

6. Ohmoto teaches of receiving data strings (Fig 2) and outputting a data compression dictionary to an information processing apparatus (Col 10, lines 49-54; Col 4, lines 49-50. However, Ohmoto does not specifically teach of identifying strings transmitted by a cable modem or transmitting compressed data dictionary to a cable modem in a DOCSIS network.

7. Rakib teaches of transmitting data and receiving compressed data (Col 2, lines 2-7; Col 14, lines 45-46) through cable modems in a DOCSIS network (Col 61, lines 56-59; Col 62, lines 14-19).

8. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Ohmoto and Rakib because the teachings of Rakib to transmit compressed data through a cable modem in a DOCSIS network would improve the capability of Ohmoto's teachings by allowing Ohmoto's method of compression to be used with various data packets, and Rakib teachings allow Ohmoto teachings to be applied over a communications network, specifically to users of cable modem.

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9. As per claim 3, Ohmoto teaches substantially the invention as claimed including a method for generating and transmitting a data compression dictionary. Ohmoto's teachings comprising of:

i. receiving a plurality of data packets for transmission, wherein each of said data packets has a payload portion comprised of one or more data strings (Col 6, lines 32-40.

Identifies repeating character strings.);

ii. identifying which of said data packets has a payload portion that can be compressed (Col 6, lines 32-40. Identifies repeating character strings.);

iii. for each of said data packets identified in said step (ii), replacing each of said one or more data strings contained in said payload portion with a token from said data compression dictionary assigned to represent said one or more data strings (Col 4, lines 30-34. Replace strings with registration numbers.).

iv. appending a compression indicator to each of said tokens within each of said data packets (Col 4, lines 31. Registration number.)

10. Ohmoto does not teach of transmitting said data packets within a DOCSIS service identifier.

11. Rakib teaches of transmitting packets (Col 2, lines 2-7; Col 14, lines 45-46) within a DOCSIS network (Col 61, lines 56-59; Col 62, lines 14-19).

12. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Ohmoto and Rakib because the teachings of Rakib to transmit packets in a DOCSIS network would improve the capability of Ohmoto's teachings by allowing Ohmoto's method of compression to be used with various data packets, and Rakib's

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teachings allow Ohmoto teachings to be applied over a specific communications network such as a DOCSIS network.

13. As per claim 7, Ohmoto teaches substantially the claimed invention including a method for restoring compressed data transmitted a network. Ohmoto's teachings comprise of:

i. receiving a plurality of data packets, wherein each of said data packets has a payload portion (Col 4, lines 49-50. Restoring process will be performed in an information processing apparatus.);

ii. identifying each of said plurality of data packets having a compression indicator appended to one or more tokens within said payload portion (Col 25, lines 53-54. Identifies code.); and

iii. for each of said data packets identified in said step (ii), replacing each of said one or more tokens contained within said payload portion with a data string assigned to represent said one or more tokens found in a data compression dictionary (Col 25, lines 50-56. Obtains character string from the dictionary in accordance with the code.).

14. Rakib teaches of transmitting data and receiving compressed data (Col 2, lines 2-7; Col 14, lines 45-46) through cable modems in a DOCSIS network (Col 61, lines 56-59; Col 62, lines 14-19).

15. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Ohmoto and Rakib because the teachings of Rakib to transmit compressed data through a cable modem in a DOCSIS network would improve the capability of Ohmoto's teachings by allowing Ohmoto's method of compression to be used with

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various data packets and allows Ohmoto teachings to be applied over a communications network, specifically with users of cable modem.

16. As per claims 4 and 8, Ohmoto teaches the method wherein the token is a binary string (Col 9, lines 10-11. ASCII code.).

17. Claims 2 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohmoto and Rakib in view of Carr, US Patent #5,293,379.

18. As per claim 2, Ohmoto does not teach the method of claim 1, wherein the data compression dictionary is individually tuned for each one of a plurality of DOCSIS networks.

19. Carr teaches of providing individual user-data dictionaries (Col 7, lines 43-44).

20. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Ohmoto and Carr because both teachings deal with using dictionaries for compressing data. Furthermore, the teachings of Carr to use individual dictionaries would improve the teachings of Ohmoto because individual dictionaries would improve the probability that user data appearing in succeeding packets will be efficiently compressed.

21. As per claim 6, Ohmoto does not teach the method of claim 3 wherein said data compression dictionary is pre-defined and fixed.

22. Carr teaches of a dictionary that is predefined and fix (Col 2, lines 44-45).

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23. It would have been obvious to one of ordinary skill in the art at the invention was made to combine the teachings of Ohmoto and Carr because both teachings deal with using a dictionary to compress data. Furthermore, the teachings of Carr's "Background of the Invention" to have a dictionary that is predefined and fix would improve enhance the data compression of Ohmoto's teachings by allowing for faster replacement of data strings with the characters.

24. Claims 5 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohmoto and Rakib in view of Eller, US Patent #5,737,733.

25. As per claims 5 and 9, Ohmoto teaches of providing the length of the character string in the dictionary. However, Ohmoto does not teach the method of claim 4 wherein the compression indicator indicates the length of the binary string.

26. Eller teaches of providing a length indicator to each compressed code (Col 20, lines 58-62).

27. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Ohmoto and Eller because both teachings deal with generating data dictionaries for the process of compression and decompression. Further, the teachings of Eller to include a compression indicator would improve the teachings of Ohmoto's teachings by allowing for an efficient and faster decompression process.

### ***Conclusion***

28. A shortened statutory period for reply to this Office action is set to expire THREE MONTHS from the mailing date of this action.



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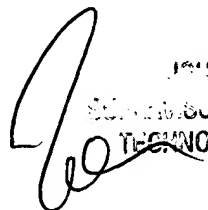
29. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua Joo whose telephone number is 571 272-3966. The examiner can normally be reached on Monday to Friday 7 to 4.

30. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John A. Follansbee can be reached on 571 272-3964. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

31. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

June 16, 2005

JJ

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